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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,633	06/21/2001	Mark L. Yarkosky	1654	6146

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EXAMINER	
FOX, BRYAN J	

ART UNIT	PAPER NUMBER
2686	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/886,633	YARKOSKY ET AL.	
	Examiner	Art Unit	
	Bryan J. Fox	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,3,5-14 and 17-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2, 3, 5-14, 17-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 21, 2005 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 5, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US006385435B1) in view of Kim (US20010046215A1) and further in view of Trompower et al.

Regarding **claim 2**, the combination of Lee, Kim and Trompower et al discloses the antenna must be aligned to receive the pilot signal from the base station and the repeated signal is received from the cell site antenna, or base station (see e.g. Lee figure 2), which reads on the claimed, "aligning the directional receiving antenna with the selected base station in the cellular wireless network to selectively receive the preferred pilot signal, wherein the selected base station transmits the preferred pilot signal."

Regarding **claim 5**, the combination of Lee and Kim fails to disclose the use of a Yagi antenna.

In a similar field of endeavor, Trompower et al discloses the use of a Yagi antenna (see column 9, lines 16-24).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above Yagi antenna disclosed by Trompower et al. in order to take advantage of the benefits of a Yagi antenna such as higher gain in the desired direction.

Regarding **claim 19**, Lee discloses a repeater system where a signal is received, amplified and retransmitted (see column 4, lines 64-65). As can be seen in figure 4, the signal is received from a cell site antenna, which reads on the claimed base station. The repeated signal is sent to a shadow area (see figure 3). Lee fails to specifically point out that a pilot signal will be retransmitted.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The combination of Lee and Kim suggests the use of a directional receiving antenna in figure 4 of Lee, however, the use of a directional antenna is not specifically pointed out.

In a similar field of endeavor, Trompower et al. clearly discloses the use of a directional receiving antenna (see column 9, lines 16-24 and figure 2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above directional antenna disclosed by Trompower et al. in order to take advantage of the benefits of a directional antenna such as higher gain in the desired direction. The resultant combination of Lee, Kim and Trompower et al discloses, "receiving a preferred pilot signal in a directional receiving antenna from a selected base station." Further, the combination of Lee, Kim and Trompower et al inherently provides support for the boosted signal dominating a polluting pilot signal, as a person of ordinary skill in the art would recognize that noise is inherent in a wireless system and as further shown by Kim's teaching of a repeater's installation being intended to increase strength of pilot signals so as to enable the mobile terminals to easily acquire in-building base stations (see Kim page 5, paragraph 46).

Regarding **claim 20**, Lee discloses a repeater system where a signal is received, amplified and retransmitted (see column 4, lines 64-65 and figure 6). A receiving antenna receives a signal from a cell site antenna (see figure 4), which reads on the

claimed receiving antenna for receiving a signal from a selected base station. The amplifier shown in figure 6 has both an input and an output as claimed and as it is used to amplify signals received from the input antenna transmitted by the output antenna, which reads on the claimed "radio-frequency amplifier". The repeated signal is sent to a shadow area (see figure 3). Lee fails to specifically disclose that a pilot signal will be retransmitted.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The combination of Lee and Kim suggests the use of a directional receiving antenna in figure 4 of Lee, however, the use of a directional antenna is not specifically pointed out.

In a similar field of endeavor, Trompower et al. clearly discloses the use of a directional receiving antenna (see column 9, lines 16-24 and figure 2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above directional antenna disclosed by Trompower et al. in order to take advantage of the benefits of a directional antenna such as higher gain in the desired direction. The resultant combination of Lee, Kim and Trompower discloses, "a directional receiving antenna for receiving a preferred pilot signal from a selected base station." Further, the combination of Lee, Kim and Trompower et al inherently provides support for the boosted signal

dominating a polluting pilot signal, as a person of ordinary skill in the art would recognize that noise is inherent in a wireless system and as further shown by Kim's teaching of a repeater's installation being intended to increase strength of pilot signals so as to enable the mobile terminals to easily acquire in-building base stations (see Kim page 5, paragraph 46).

Claims 7-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kim in view of Trompower et al, and further in view of Leslie et al. (US006404775B1).

Regarding **claim 7**, Lee discloses a repeater system where a signal is received, amplified and retransmitted (see column 4, lines 64-65). As can be seen in figure 4, the signal is received from a cell site antenna, which reads on the claimed base station. The repeated signal is sent to a shadow area (see figure 3), which reads on the claimed, "substantially only along a boundary between the first and second geographical areas." Lee fails to specifically point out that a pilot signal will be retransmitted.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The

combination of Lee and Kim suggests the use of a directional receiving antenna in figure 4 of Lee, however, the use of a directional antenna is not specifically pointed out.

In a similar field of endeavor, Trompower et al. clearly discloses the use of a directional receiving antenna (see column 9, lines 16-24 and figure 2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above directional antenna disclosed by Trompower et al. in order to take advantage of the benefits of a directional antenna such as higher gain in the desired direction. The resultant combination of Lee, Kim and Trompower et al discloses, "receiving a preferred pilot signal in a directional receiving antenna from a selected base station that provides wireless coverage in the second geographical area."

The combination of Lee, Kim and Trompower fails to teach the use of a directional antenna for transmitting the repeated signal.

In a similar field of endeavor, Leslie et al. discloses a repeater system where the repeater uses directional antennas to divide the repeater area into several sectors (see column 10, lines 10-16), which reads on the claimed directional transmitting antenna.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Trompower et al. with Leslie et al. to include the above directional repeater antenna in order to better serve a sector served by the repeater.

Regarding **claim 8**, the combination of Lee, Kim, Trompower et al and Leslie discloses the antenna must be aligned to receive the pilot signal from the base station

and the repeated signal is received from the cell site antenna, or base station (see e.g. Lee figure 3), which reads on the claimed, "aligning the directional receiving antenna with the selected base station in the cellular wireless network to selectively receive the preferred pilot signal, wherein the selected base station transmits the preferred pilot signal."

Regarding **claim 9**, the combination of Lee, Kim, Trompower et al and Leslie discloses the antenna must be aligned to transmit in the shadow area (see e.g. Lee figure 3). By aligning the antenna such that the signal is transmitted in the selected second geographical area, the signal strength is lowered in the first geographical area because the antenna is not focused in that area.

Regarding **claim 11**, Lee discloses a repeater system where a signal is received, amplified and retransmitted (see column 4, lines 64-65 and figure 6). A receiving antenna receives a signal from a cell site antenna (see figure 4), which reads on the claimed receiving antenna for receiving a signal from a selected base station. The amplifier shown in figure 6 has both an input and an output as claimed and as it is used to amplify signals received from the input antenna transmitted by the output antenna, which reads on the claimed "radio-frequency amplifier". The repeated signal is sent to a shadow area (see figure 3), which reads on the claimed, "substantially only along a boundary between the first and second geographical areas." Lee fails to specifically point out that a pilot signal will be retransmitted.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The combination of Lee and Kim suggests the use of a directional receiving antenna in figure 4 of Lee, however, the use of a directional antenna is not specifically pointed out.

In a similar field of endeavor, Trompower et al. clearly discloses the use of a directional receiving antenna (see column 9, lines 16-24 and figure 2).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above directional antenna disclosed by Trompower et al. in order to take advantage of the benefits of a directional antenna such as higher gain in the desired direction. The resultant combination of Lee, Kim and Trompower discloses, "a directional receiving antenna for receiving a preferred pilot signal from a selected base station that provides wireless coverage in the second geographical area."

The combination of Lee, Kim and Trompower fails to teach the use of a directional antenna for transmitting the repeated signal.

In a similar field of endeavor, Leslie et al. discloses a repeater system where the repeater uses directional antennas to divide the repeater area into several sectors (see column 10, lines 10-16), which reads on the claimed directional transmitting antenna.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Trompower et al. with Leslie et

al. to include the above directional repeater antenna in order to better serve a sector served by the repeater.

Regarding **claim 12**, the combination of Lee and Kim fails to disclose the use of a Yagi antenna.

In a similar field of endeavor, Trompower et al discloses the use of a Yagi antenna (see Trompower column 9, lines 16-24).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above Yagi antenna disclosed by Trompower et al. in order to take advantage of the benefits of a Yagi antenna such as higher gain in the desired direction. The combination of Lee, Kim and Trompower fails to teach the use of a directional antenna for transmitting the repeated signal.

In a similar field of endeavor, Leslie et al. discloses a repeater system where the repeater uses directional antennas to divide the repeater area into several sectors (see column 10, lines 10-16), which reads on the claimed directional transmitting antenna.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Trompower et al. with Leslie et al. to include the above directional repeater antenna in order to better serve a sector served by the repeater.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kim and Trompower et al. and further in view of Sabat, Jr. et al. (US20020016170A1).

Regarding **claims 3 and 6**, the combination of Lee, Kim and Trompower et al. fails to teach the use of a surface acoustic wave device.

In a similar field of endeavor, Sabat, Jr. et al. disclose the use of a SAW filter and amplifier (see page 7, paragraph 74).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Trompower et al. to include the SAW filter and amplifier disclosed by Sabat Jr. et al. in order to take advantage of the sharp filtering operation of the saw filter as suggested by Sabat Jr. et al. in page 7, paragraph 74.

Claims 10, 14, 17, 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kim, Trompower et al. and Leslie et al. and further in view of Sabat Jr. et al.

Regarding **claims 10 and 14**, the combination of Lee, Kim, Trompower et al. and Leslie et al. fails to teach the use of a surface acoustic wave device.

In a similar field of endeavor, Sabat, Jr. et al. disclose the use of a SAW filter and amplifier (see page 7, paragraph 74).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Trompower et al. to include the

SAW filter and amplifier disclosed by Sabat Jr. et al. in order to take advantage of the sharp filtering operation of the saw filter as suggested by Sabat Jr. et al. in page 7, paragraph 74.

Regarding **claim 17**, Lee discloses a repeater system that receives a signal, amplifies the signal and retransmits the signal (see column 4, lines 64-65 and figure 6). The signal is transmitted into a shadow area (see figure 3), which reads on the claimed, "substantially only along a boundary of the geographical area." Lee fails to specifically point out that the signal is a pilot signal.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The combination of Lee and Kim suggests the use of a directional receiving antenna in figure 4 of Lee, however, the use of a directional antenna is not specifically pointed out.

In a similar field of endeavor, Trompower et al. clearly discloses the use of a directional receiving antenna (see column 9, lines 16-24 and figure 2). The directional antenna must be aligned with the signal desired or the system will not function properly.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above directional antenna disclosed by Trompower et al. in order to take advantage of the benefits of a directional antenna such as higher gain in the desired direction. The resultant

combination of Lee, Kim and Trompower discloses, "aligning a directional receiving antenna with a selected base station that provides coverage in the second geographical area in the cellular wireless network to selectively receive a preferred pilot signal."

The combination of Lee, Kim and Trompower fails to teach the use of a directional antenna for transmitting the repeated signal.

In a similar field of endeavor, Leslie et al. discloses a repeater system where the repeater uses directional antennas to divide the repeater area into several sectors (see column 10, lines 10-16), which reads on the claimed directional transmitting antenna.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Trompower et al. with Leslie et al. to include the above directional repeater antenna in order to better a sector served by the repeater. The combination of Lee, Kim, Trompower et al. and Leslie et al. fails to teach the use of a surface acoustic wave device.

In a similar field of endeavor, Sabat, Jr. et al. disclose the use of a SAW filter and amplifier (see page 7, paragraph 74).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim, Trompower et al. and Leslie et al to include the SAW filter and amplifier disclosed by Sabat Jr. et al. in order to take advantage of the sharp filtering operation of the saw filter as suggested by Sabat Jr. et al. in page 7, paragraph 74.

Regarding **claim 18**, Lee discloses a repeater system where a signal received by the repeater antenna is amplified and retransmitted to the desired geographical area

(see column 4, lines 64-65 and figures 2 and 6). The signal is transmitted into a shadow area (see figure 3), which reads on the claimed, "substantially only along a boundary of the geographical area." Lee fails to specifically point out that the signal is a pilot signal.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The combination of Lee and Kim fails to teach the use of a surface acoustic wave device.

In a similar field of endeavor, Sabat, Jr. et al. disclose the use of a SAW filter and amplifier (see page 7, paragraph 74).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the SAW filter and amplifier disclosed by Sabat Jr. et al. in order to take advantage of the sharp filtering operation of the saw filter as suggested by Sabat Jr. et al. in page 7, paragraph 74. The combination of Lee, Kim and Sabat Jr. et al. fails to teach the use of a Yagi receiving antenna.

In a similar field of endeavor, Trompower discloses a repeater system the specifically points out the possibility of using a Yagi antenna in 290 (see column 9, lines 19-22) for the reception of the signal from a base station.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Sabat Jr. et al. to include the Yagi antenna disclosed by Trompower et al. in order to benefit from the advantages of a Yagi antenna such as higher gain. The resultant combination of Lee, Kim, Sabat, Jr and Trompower et al discloses, "a Yagi receiving antenna for receiving a preferred pilot signal from a selected base station that provides wireless coverage in the second geographical area."

Regarding **claim 22**, Lee discloses a repeater system where a signal received by the repeater antenna is amplified and retransmitted to the desired geographical area (see column 4, lines 64-65 and figures 2 and 6). The signal is transmitted into a shadow area (see figure 3). Lee fails to specifically point out that the signal is a pilot signal.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The combination of Lee and Kim fails to teach the use of a surface acoustic wave device.

In a similar field of endeavor, Sabat, Jr. et al. disclose the use of a SAW filter and amplifier (see page 7, paragraph 74).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the SAW filter and

amplifier disclosed by Sabat Jr. et al. in order to take advantage of the sharp filtering operation of the saw filter as suggested by Sabat Jr. et al. in page 7, paragraph 74. The combination of Lee, Kim and Sabat Jr. et al. fails to teach the use of a Yagi receiving antenna.

In a similar field of endeavor, Trompower discloses a repeater system the specifically points out the possibility of using a Yagi antenna in 290 (see column 9, lines 19-22) for the reception of the signal from a base station.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Sabat Jr. et al. to include the Yagi antenna disclosed by Trompower et al. in order to benefit from the advantages of a Yagi antenna such as higher gain. The resultant combination of Lee, Kim, Sabat, Jr and Trompower et al discloses, "a Yagi receiving antenna for receiving a preferred pilot signal from a selected base station; a radio frequency amplifier having an input and an output, wherein the input accepts the preferred pilot signal from the yagi receiving antenna and the output provides a boosted pilot signal," and, "wherein the radio frequency amplifier includes a surface amplitude wave filter to selectively amplify the preferred pilot signal; and a transmission antenna that accepts the boosted pilot signal from the output of the radio frequency amplifier and transmits the boosted pilot signal within the geographical area." Further, the combination of Lee, Kim and Trompower et al inherently provides support for the boosted signal dominating a polluting pilot signal, as a person of ordinary skill in the art would recognize that noise is inherent in a wireless system and as further shown by Kim's teaching of a repeater's installation

being intended to increase strength of pilot signals so as to enable the mobile terminals to easily acquire in-building base stations (see Kim page 5, paragraph 46).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lee, Kim, Trompower et al and Leslie as applied to claim 11 above, and further in view of what was well known in the art (see MPEP 2144.03).

Regarding **claim 13**, the combination of Lee, Kim, Trompower et al. and Leslie et al. discloses the use of a directional Yagi antenna to receive a signal from the base station (see Trompower et al. column 9, lines 64 – column 10, line 16 and figure 2), but fails to expressly disclose the use of a Yagi antenna to transmit the pilot signal.

The examiner takes official notice that Yagi antennas were well known at the time of the invention.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a Yagi antenna when a specific coverage area is desired as suggested in figure 1 of Lee in order to take advantage of the benefits of a Yagi antenna such as increased gain.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kim and Trompower et al, and further in view of Sabat, Jr.

Regarding **claim 21**, Lee discloses a repeater system that receives a signal, amplifies the signal and retransmits the signal (see column 4, lines 64-65 and figure 6).

The signal is transmitted into a shadow area (see figure 3). Lee fails to specifically point out that the signal is a pilot signal.

In a similar field of endeavor, Kim discloses the use of a repeater to retransmit pilot signals (see page 5, paragraph 46).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Lee to include the above retransmission of a pilot signal disclosed by Kim in order to increase the area of coverage of a base station. The combination of Lee and Kim suggests the use of a directional receiving antenna in figure 4 of Lee, however, the use of a directional antenna is not specifically pointed out.

In a similar field of endeavor, Trompower et al. clearly discloses the use of a directional receiving antenna (see column 9, lines 16-24 and figure 2). The directional antenna must be aligned with the signal desired or the system will not function properly.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee and Kim to include the above directional antenna disclosed by Trompower et al. in order to take advantage of the benefits of a directional antenna such as higher gain in the desired direction. The resultant combination of Lee, Kim and Trompower discloses, "aligning a directional receiving antenna with a selected base station in the cellular wireless network to selectively receive a preferred pilot signal, wherein the selected base station transmits the preferred pilot signal; receiving the preferred pilot signals in a directional receiving antenna within the geographical area from the selected base station; selectively amplifying the preferred pilot signal," and, "transmitting the boosted pilot signal within

the geographical area." Further, the combination of Lee, Kim and Trompower et al inherently provides support for the boosted signal dominating a polluting pilot signal, as a person of ordinary skill in the art would recognize that noise is inherent in a wireless system and as further shown by Kim's teaching of a repeater's installation being intended to increase strength of pilot signals so as to enable the mobile terminals to easily acquire in-building base stations (see Kim page 5, paragraph 46).

The combination of Lee, Kim and Trompower et al. fails to teach the use of a surface acoustic wave device.

In a similar field of endeavor, Sabat, Jr. et al. disclose the use of a SAW filter and amplifier (see page 7, paragraph 74).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Lee, Kim and Trompower et al. to include the SAW filter and amplifier disclosed by Sabat Jr. et al. in order to take advantage of the sharp filtering operation of the saw filter as suggested by Sabat Jr. et al. in page 7, paragraph 74.

Response to Arguments

Applicant's arguments filed October 21, 2005 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 2, 3, 5, 6 and 19-22 have been considered but are moot in view of the new ground(s) of rejection.

The applicant argues that the combination of Lee, Kim, Trompower and Leslie fails to disclose the selected base station provides wireless coverage in the second geographical area. The examiner respectfully disagrees. Lee discloses that signals in the shadow area are too weak to be used (see Lee column 1, lines 11-24) and the repeater is used to extend the coverage area of the base station (see Lee column 1, lines 25-45), which reads on the claimed base station providing coverage in the second geographical area.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J. Fox whose telephone number is (571) 272-7908. The examiner can normally be reached on Monday through Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bryan Fox
January 19, 2005

CHARLES APPIAH
PRIMARY EXAMINER